

REMARKS

This is in response to the Office Action mailed on November 7, 2003, in which all pending claims 1-6 were rejected. Specifically, claims 1-4 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quanrud (USP 6,140,983) in view of Vickers (USP 6,414,249), and claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Quanrud and Vickers and further in view of Nakamoto (USP 6,031,328). In addition the Examiner noted that the Summary of the Invention and Abstract were missing from the specification.

Specification

With this Amendment, the headings BACKGROUND OF THE INVENTION, SUMMARY OF THE INVENTION, BRIEF DESCRIPTION OF THE DRAWINGS, and DETAILED DESCRIPTION have been added for clarity.

The Abstract was already included as page 11 of the instant application. However, for the Examiner's convenience, a copy of the Abstract as filed is enclosed with this Amendment.

Claim Rejections – 35 U.S.C. § 103

Claims 1-4 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quanrud in view of Vickers.

Claim 1, as amended, recites a matrix analog system for the reproduction of images that employs two sequential devices, characterized by an analog pixel matrix command accomplished through two independent sequential distribution devices. This command scheme authorizes a non-predetermined number of pixels, thereby achieving dynamic image resolution adjustment. This is accomplished by controlling each sequential device (such as a horizontal control device and a vertical control device) through separate oscillators that independently control the sweeping speed of the lines and columns of the matrix. Thus, the oscillators of the two sequential devices dynamically compose the video image in real time, without incorporating information about previous video signals, and without the use of A/D or D/A converters, computers, digital memories, etc.

The Quanrud '417 patent discloses a digital display having multiple memory elements per pixel. As noted by the Examiner, the Quanrud '417 patent does not disclose control of the two sequential devices by separate internal oscillators.

The Vickers '249 patent discloses a field emission device (FED) display, a portion of which is shown in Figure 2 of that patent. The Examiner has identified the data formatter and timing control block (24) shown in Figure 2 as the mechanism for synchronization of the video image that employs separate internal oscillators in each sequential device to control the sweeping speed of the lines and columns of the matrix.

However, the FED display described in the '249 patent is precisely the state of the prior art upon which the present invention seeks to improve, and does not employ oscillators for the lines and column drivers to dynamically control the resolution of the image. FED displays include a matrix array of individually addressable light generating means which react to electron bombardment by emitting visible light. See column 1, lines 42-54. The number of pixels (that is, the resolution) of the image being displayed by the FED display is predetermined. The information needed to control the column drivers (26) and the row drivers (28) of the display is obtained by converting the original video data signal at the data formatter and timing control block (24) into digital form (not analog oscillator pulses).

By contrast, the invention recited in amended claim 1 dynamically controls the resolution of the display by controlling the sweeping speed of the lines and columns of the matrix via internal oscillators. This control is accomplished in truly analog fashion by the oscillators in the two independent sequential devices. As such, previous information about a pixel being addressed does not need to be known, and use of a digital memory (such as memory 32 in the '249 patent) for that purpose is not needed.

In order to reject a claim under 35 U.S.C. § 103 as being obvious over a combination of references, all the claim limitations must be taught or suggested by the combination. See M.P.E.P. 2143.03, citing In re Royka, 180 U.S.P.Q. 580 (C.C.P.A. 1974). In this case, neither Quanrud nor Vickers disclose, teach or suggest separate internal oscillators for dynamically controlling image

resolution by controlling the sweeping speed of columns and lines of the image matrix. The control scheme of the prior art works with a predetermined number of pixels, and does not disclose, teach or suggest authorizing a non-predetermined number of pixels based on the selected oscillator sweeping speed. Because the combination of cited references does not disclose, teach or suggest all of the elements of amended claim 1, the rejection of claim 1 under 35 U.S.C. § 103(a) should be withdrawn.

Claims 2-6 depend from amended claim 1, and are allowable therewith. In addition, it is respectfully submitted that the combinations of features recited in claims 2-6 are patentable on their own merits, although this does not need to be specifically addressed herein since any claim depending from a patentable independent claim is also patentable. See M.P.E.P. 2143.03, citing In re Fine, 5 U.S.P.Q.2d (BNA) 1596 (Fed. Cir. 1988). For example, claim 3 recites a system for utilizing analog memory and drive for the control of pixels that do not present the characteristic of emitting light while not powered. The Examiner's rejection of this claim was based on the description in Quanrud of controlling LEDs, which do not emit light while not powered. However, the control achieved in Quanrud is digital in nature, and does not utilize analog memory as claimed. See, e.g., column 24, lines 1-4.

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Application No.: 09/762,876

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CONCLUSION

In view of the foregoing, all pending claims 1-6 are in condition for allowance. A Notice to that effect is respectfully requested.

The Examiner is cordially invited to contact the undersigned at the telephone number listed below if such a call would in any way facilitate allowance of this application.

Respectfully submitted,

KINNEY & LANGE, P.A.

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5/7/04

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ABSTRACT

“MATRIX ANALOG SYSTEM FOR THE REPRODUCTION OF IMAGES”
characterised for presenting an electronic command system for matrixes for the
reproduction of video images in real time by means of pixels in a way that the
5 image displayed by the matrix had analog attitude and characteristics and that
do not depend on previous processing of the video signal through analog/digital
or digital/analog converters, without the need for microprocessors, digital
memories, shift registers or even computers and converters which are normally
needed so that images could be generated on a pixel matrix. Presents variations
10 that define the means for the building of pixel matrixes that do not have the
characteristic of emitting light while not powered (LED's, lamps and similar
devices) and means for the building of a photoluminescent matrix to allow the
reproduction of colour images. Presents the addition of two grids for an
improved brightness of the phosphorus.

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